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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/623,474	09/13/2000	Masamoto Uenishi	, 197173US0PCT	2043

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EXAMINER

CHANG, VICTOR S

ART UNIT	PAPER NUMBER
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1771

7

DATE MAILED: 08/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/623,474

Applicant(s)

UENISHI ET AL.

Examiner

Victor S Chang

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Group I, claims 1-8 in Paper No. 6 is acknowledged. The traversal is on the ground(s) that Office has not provided an adequate reason or example to support a conclusion of patentable distinctness, or shown that a burden exists in searching the entire application. This is not found persuasive because co-extruding a molten crystalline polymer through a die is a well-known process as set forth in claim 9 which was not Applicant's contribution over the prior art. Thus unity of invention is lacking between Group I and Group II.

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 7, lines 3-4, the Examiner suggests to delete "and the microfibrils ... bundled together" which appears more directed to the structure of the microfibrils, which is believed to be essentially irrelevant to the claimed invention.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0740952 either individually, or in view of JP 3-169330 (Abstract) for claim 1.

EP '952 is directed to a composite hollow fiber microporous polyolefin membrane (page 3, line 3, and Example 1). The membrane comprises a microporous layer, a-layer, which provides separation function to the membrane, and an additional microporous layer, b-layer, which provides mechanical reinforcement to the membrane and is bonded to at least one surface of the a-layer (page 3, lines 3-6). Each a-layer and b-layer is composed of a plurality of micropores formed from stacked lamella and microfibrils connected with the stacked lamella (page 3, lines 6-10). It is noted that the a-layer, which provides separation function, would inherently have a denser structure than the reinforcing b-layer.

For claim 1, although EP '952 does not state the overall porosity of the membrane being at least 75% by volume, it is believed that modifying the void volume to obtain desirable flow rate is within the ordinary skill in the art. Alternatively, JP '330 teaches a 3-layer composite membrane with an intermediate separation layer A and two reinforcing layers B. The void ratio of layers B is 30-90% and the mean pore size is 0.01 – 0.5  $\mu\text{m}$  (Abstract). As, such in the absence of unexpected results, it would have

been obvious to one of ordinary skill in the art to modify the overall void volume of the membrane to be at least 75%, motivated by the desire to have a suitable filtration flow rate.

For claim 2, EP '952 does not teach the ratio of the isothermal crystallization time between the layers, however, it is noticed that the method of making the membrane by the instant claimed invention is essentially the same as EP '952, therefore it is believed that selecting a suitable ratio of the isothermal crystallization time between the layers are either inherent physical properties of the polyolefins required by the membrane manufacturing process, or an obvious optimization to one of ordinary skill in the art, motivated by the desire to form suitable size of the lamella crystals and hence the proper size of the micropores in each layers. Applicant must show that the resultant article is patentably distinct from those taught by the reference.

For claim 3 and 4, EP '952 teaches that the mean distance between each microfibril bundle in the a-layer is in the range of 0.1 - 0.8  $\mu\text{m}$  (page 3, lines 49-50), and in the b-layer is in the range of 0.2 - 1  $\mu\text{m}$  (page 4, lines 4-5). The mean distance between each knotted portion of stacked lamella, i.e., mean microfibril length, of b-layer is preferably in the range of 0.4 – 4.0  $\mu\text{m}$  (page 4, lines 10-11). Further, the mean microfibril length of a-layer appears in the range of 0.2 – 0.77  $\mu\text{m}$  (page 13, Table 1).

For claims 5 and 6, EP '952 teaches that the a-layer has a thickness in the range of 0.5 – 20  $\mu\text{m}$  (page 3, line 54), and the total membrane thickness is in the range of 5 to 500  $\mu\text{m}$  (page 3, line 37).

For claim 7, EP '952 teaches that the membrane is coated by 3 to 30% by weight of hydrophilic polymer (page 3, line 10).

For claim 8, EP '509 teaches that depending on the size of the particles to be separated, the flux value can be not less than 5 liter/(m<sup>2</sup> X hr X mmHg), i.e., greater than 37.5 L/(m<sup>2</sup> X hr X KPa) (page 4, lines 24-33).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S Chang whose telephone number is 703-605-4296. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

VSC  
August 27, 2002

DANIEL ZIRKER  
PRIMARY EXAMINER  
GROUP 1800-  
1700

*Daniel Zinker*